

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Great Plains Energy
Well Name/Number: Duck Creek 1-5
Location: NE SW Section 5 T21N R48E
County: McCone, MT; **Field (or Wildcat)** W/C

Air Quality

(possible concerns)

Long drilling time: No, 15 to 25 days drilling time.

Unusually deep drilling (high horsepower rig): No, heavy double derrick drilling rig or a small triple derrick drilling rig to go to 9,800' TVD.

Possible H₂S gas production: Slight chance H₂S gas.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using double/triple derrick rig to drill to 9800'TVD, vertical Interlake Formation test.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, freshwater and freshwater mud system on surface hole and invert mud system on the mainhole.

High water table: No high water table anticipated at this location.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Duck Creek, about 1/8 of a mile to the south.

Water well contamination: None, closest water well is in NW ¼ of section 5 at a depth of these about 100'. Surface casing setting depth of 1600'.. Surface hole will be drilled with freshwater and surface casing set and cemented back to surface from 1600'.

Porous/permeable soils: No, silty sandy clay soils.

Class I stream drainage No Class I stream drainages in the area.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1600' of surface casing cemented to surface adequate to protect freshwater zones. Oil base drilling fluids will be recycled. Completion fluids will be hauled to an authorized Class II disposal well. Cuttings will be buried in the lined reserve pit. No concerns.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated.

High erosion potential: No, about 11' of cut/fill required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, 375'X300' location size required.

Damage to improvements: Slight

Conflict with existing land use/values: Slight, surface use is grassland.

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Using existing county road, North Road and will construct about 2257' of new access into this location off the existing road. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residence - about 3/4 miles to the northwest.

Possibility of H2S: Slight chance H2S.

Size of rig/length of drilling time: Heavy Double/Small Triple drilling rig- 15 to 25 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: 3000 psi Double ram and annular BOP with adequate surface casing should prevent any problems.

8.00

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: None

Conflict with game range/refuge management: None

Threatened or endangered Species: Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Lease Tern, Piping Plover, Black-footed Ferret and Whooping Crane. Species listed as candidate species are the Greater Sage Grouse

and Sprague's Pipit. NH tracker website for this Township and Range lists only one (1) species of concern as the Western Hog-nose Snake.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private grassland surface lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: On private CRP/grassland surface lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Wildcat well. No concerns.

Remarks or Special Concerns for this site

Well is a 9,000' TD vertical Interlake Formation test in McCone County

Summary: Evaluation of Impacts and Cumulative effects

No significant long term impacts expected, some short term impacts are expected.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Thomas Richmond
(title:) Administrator
Date: October 22, 2013

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
McCone County water wells
(subject discussed)
October 22, 2013
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T22N R47E
(subject discussed)

October 22, 2013
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____